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Design in the Surroundings of Houses.

A FEW months ago Mr. Charles Eliot, the well-known landscape-gardener, read before the Massachusetts Horticultural Society a most instructive paper with the above title. Assuming that every one desires to have his house and grounds beautiful as well as convenient, Mr. Eliot insisted (1) that the real beauty of what he aptly termed the "house-scene" is never derived from added decoration, but must spring directly from the scene itself; and (2) that this beauty can be attained only when the house and its surroundings are thought out together as one design and composition. These truths are fundamental, and yet the ordinary practice is to build houses without much reference to the land about them, and often with no thought of so essential a matter as the way of approach. After the building is complete some attention may be given to making the scene a pleasant one to look upon; and this is usually done by inserting flower-beds or specimen plants here and there, without reference to the nature of the ground.

Illustrations of the truth of both these propositions can be found in town and country, but it is our purpose now to present a portion of Mr. Eliot's paper which relates to the suburb—a district where roads and houses dominate the landscape. Generally the ground here is level, the boundaries straight, and the lots comparatively small. In such neighborhoods the architect's share in making the scene is predominant, and an error in the style of the house is fatal to the effect of the house-scene. A many-angled and many-gabled building on a smooth site, in a straight-bounded enclosure, is out of keeping, and so is a tangle of bushes and bowlders, or a sharply-curved approach-road. This does not imply that the curve must be forbidden and the path made straight when the streets are curved or when the house-door is reached most easily by a curved line, but it does mean that purposeless curvature, such as prevails in many suburbs, should be shunned.

But we leave Mr. Eliot to speak in his own language:

"Awkward and breadth-destroying lines of approach are the rule in the suburbs, and the architect is often responsible for them, for he frequently places the house door in such a position that the path or road leading to it must necessarily cut the ground before the house into lamentably small pieces; and he does this, too, when a little thought might perhaps have brought about that happiest of all arrangements in which a stretch of grass as long or longer than the building is brought without a break up to the house-wall itself. No subsequent planting can obliterate mistakes in these controlling elements of the suburban house-scene, the house and the approach; and no planting can accomplish what it otherwise might, if, by reason of unmindfulness of the effect of the house-scene as a whole, the framework of the scene is wrongly put together.

"It is seldom that a suburban lot, after the house and approaches are built, retains much of its former vegetation. A few large trees may survive the necessary gradings, but the natural ground covering is generally killed out. On the completion of the grading, grass is sown, and from the resulting sheet of green, the house-walls and the boundary walls or fences rise abruptly. It is surprising to see, as one may everywhere, well-designed houses, adorned within with much rich ornament, and probably inhabited by people who appreciate art and nature, standing thus naked in naked enclosures. The contrast between a handsome building and bare surroundings is sufficiently obvious in summer, but in winter in this New England climate it becomes positively startling, so that it is difficult to understand how educated people can fail to be impressed by it, and how they can longer refuse to comprehend that the house and the house-ground should be treated in the same spirit.

"From another point of view this nakedness is equally surprising. Here in the suburbs is an opportunity for adding to all the usual advantages and ornaments of city life the new and delightful pleasantness of verdure, fragrance, and bloom. As a matter of fact, it is an appreciation of this opportunity that causes the first plantings in most suburban grounds. Trees and shrubs, selected for their profuse flowering or their striking habit, are set out here and there, and brilliant beds of flowers are perhaps added. Desire for ornament of this sort grows by what it feeds on, and causes the pressing demand upon the nurseryman for plants of marked appearance. The effect upon house-grounds resulting from planting undertaken in this spirit is generally unfortunate. Specimens of many sorts planted promiscuously on a lawn compose an interesting, though ill-arranged museum, but not an appropriate setting for a house. They wholly destroy all that breadth of effect which is so difficult but so important to preserve in small grounds; if they grow large they interfere with the prospect and the aspect of the home, and, whatever their size, they give the scene the appearance of having been adorned to make a show, and remind one of the saying of the Greek sculptor, who charged his pupil with having richly ornamented a statue because he knew not how to make it beautiful.

"An ambition to possess a collection of handsome, curious and rare plants, like the similar passions for shells or minerals or precious stones, is entirely praiseworthy and honorable, and may well be indulged *ad libitum*, provided a place can be set apart and fittingly arranged for the purpose, as cabinets are prepared indoors for collections of curios of all sorts. Out of doors a flower-garden is such a cabinet, and there is no reason that tree and shrub gardens should not be similarly arranged by those who desire to grow many striking sorts. In formal and highly decorated pleasure-grounds, specimen trees are already used in this way, and with good effect. Before stately buildings and in connection with terraces and formal avenues, appropriate specimens are always in keeping; but in New England house-scenes not especially arranged to receive them, they destroy the last hope of good general effect.

"With what object, then, should the planting of the suburban house-ground be planned?

"I answer, with the object of helping the building, and the other controlling parts of the scene, to form an appropriate and pleasing whole. In the very smallest front yards one thing which should seldom or never be omitted can be accomplished just as well as it can be in grounds of larger area, that is, the connecting of the house-walls with the ground by means of some sort of massing of verdure. Shrubs planted near the base of the house-wall remove at once all appearance of isolation and nakedness, and nothing can help a building more than this. Here, if nowhere else, some evergreens should be used, and it is fortunate that in a climate in which hardy evergreens are few, the stiff sorts, like the box and arborvitæs and the junipers, are all entirely appropriate in close connection with a building. The more irregular the structure, the more varied in detail may be these wall-plantings, but if the house is of formal design, a hedge-like row of bushes may be best. The older houses in many New England villages often have bushes set out thus along their walls; and at the Longfellow

Place in Cambridge the same purpose is accomplished by a low-terrace balustrade, half covered by creepers.

"In grounds a little larger than the smallest, the securing of some breadth of effect by means of grass should be attended to next after the wall-plantings. If there is space enough to get this openness and, at the same time, have some bushes near the street line as well as next the house, so much the better. Plant nothing which will grow to a size disproportionate to the scene. Large trees on small lots are not only inappropriate, but they shade the ground excessively and make it difficult to grow the indispensable ground-covering of shrubs. Maintaining sufficient openness, plant shrubs also against the naked fences, or grow climbers on them if space does not permit of anything more. In large grounds give the house a setting or background of appropriate trees. Where, as in New England, climate keeps deciduous plants leafless half the year, plant for effect in winter as carefully as for the summer; use all possible broad-leaved evergreens and all the cheerful fruit-bearing and colored-stemmed shrubs, and for summer add various sorts of foliage and bloom, but keep the whole scene to its own appropriate style, admitting brilliant decoration only in detail, and conspicuous single objects only rarely if at all. If many flowers are desired, they should be grown in a garden or in formal beds close beside the formal building. The permanent scene can be helped only in its details by the temporary beauty of bulbs and herbs.

"To appreciate that a house-scene depends for real effectiveness upon its general design and not upon decoration, one need only look upon some such ground as that of the Longfellow Place, before mentioned, where the planting consists of two Elms supporting the sides of the house, creepers covering the balustrade at its base, and lilacs flanking the balustrade and forming a hedge along the street-wall. The open space of grass is well proportioned, and the whole scene is one which, in its formal symmetrical style, is not surpassed for effectiveness in all New England. Suitable general design is just as effective in any other conceivable style."

Among Oaks, Madrones and Redwoods.

I HAVE just returned to San Francisco after a visit to that portion of the Coast Range that lies between Austin Creek and Russian River, in Sonoma County. From Cazadero, on Austin Creek, eighty-nine miles north of San Francisco, I drove about twelve miles east, over a mountain road of wonderfully varied beauty, to Guerneville, on Russian River, and the Redwood forests there; thence southwest along the Russian to the mouth of Austin Creek, and up that stream to Cazadero again, a total round of about thirty miles, and, all in all, one of the most characteristic drives to be had anywhere in the California mountains.

The Azaleas were still in bloom in very large masses on Austin Creek, near Cazadero. The Bohemian Club of San Francisco have their summer camp here, in a grove of fine Redwoods, on a "flat" between the stream and the mountain. The twenty acres of timber are valued at $20,000, and are a part of the Montgomery estate of over 1,200 acres, on which no Redwoods are to be cut for many years. Outside of this property the waste and the ravages of fires are frightful. In almost every side-gulch are the remains of old lumber-camps. A few men are working up the stumps for fuel for the railroad company. In places the forest fires have destroyed the soil and leaf-mould, leaving only the rocks, and even the hardy Redwood sprouts have not survived.

Ascending the mountain ridges east of the beautiful Redwood forests of Cazadero, the most striking features on the summits are the groups of Oaks, both White and Black, and of superb size and proportion. The way in which Oaks cluster on the vast rock-masses that rise out of the mountain-tops like ancient hill-forts is almost worth a separate paper. They seem to crown old castle ruins or fallen Cyclopean walls, and the form of the stratified rock-ledges adds to the illusion.

The Madrone is one of the great features of this mountain region. Hanging over a wild cañon was one whose trunk girthed nearly twenty feet, and in spread of boughs it was as large as a Valley Oak. Sometimes, for miles of travel through the woods here, the scarlet Madrone stems, gleaming under their broad green leaves, illuminate slope after slope, and height after height. Stems of from half an inch up to five or six inches in diameter stand in thickets with young Douglas Spruce and Tan-bark Oaks in blossom. The color of the Madrone, though a real scarlet at its brightest, begins in browns, greens and yellows, and has more chameleon shades in sun and shadow than any painter could hope to imitate. About the base there are dark browns, streaked with yellows and dull scarlets when the thin husk of the outer bark falls apart in veins or breaks off in flakes, till one can gather a handful at the base of the tree. Below the beautiful crowns of leaves, as large and almost as dark as the leaves of *Magnolia grandiflora*, the new wood is light, clear-hued green, yellowing downward for several feet. Then comes the reign of a scarlet, so delicate, so rich and firm and healthy, that one half believes the remark of an old pioneer who was once lost at night on these mountains. He said he "had to see his way by the Mathrona stems; they kep' the light an hour longer'n anything else."

No one knows the beauty of the Broad-leaved Maples who has not seen them in the mountain woods. In the lowlands they are plain Maples, very fair and large, with brown trunks and large green leaves. On the mountains they have lovely white and gray stems, and grow tall and graceful in clumps of from ten to a hundred, at the heads of well-watered gulches. Indeed, the bark become at times so resplendent for color that I am tempted to say that these trees rival the New England White Birches, and to call them the California Birch-Maples of the Coast Range. The Buckeye shows much of the same gray-white mottling of the bark, but the Maple is far the finest in general effect.

There are one or two farms on the very top of the mountain, and hay-fields, orchards, and vineyards extend across the heads of the ravines, but there will never be any more tillage here than now. The mountains are too steep and rocky. It is chiefly deciduous growth on the heights, chiefly conifers in the gulches, and it is a natural forest-land for miles on miles. The more intelligent men in this region see and acknowledge the necessity for strict forest-laws before it is too late, and I am told that in the best forest-belts there is comparatively little pasturage, and few cattle or sheep are kept here. The mountains are too steep. If two hundred and fifty square miles of this region, extending north and south, could be put under a forestry commission, or some safe supervision, it would secure the permanence of all the streams that head here, and water a territory half as large as the State of Connecticut.

Guerneville is an old lumber camp, but it is situated on a broad, deep and beautiful river, one of the largest in the state, next to the San Joaquin and Sacramento, and it has an immense tributary country of valleys, lesser foothills, and "land for the fruit-grower." All about it are giant stumps of fire-swept Redwoods, with orchards and pastures among them. The original forest that stood here along the Russian River was a magnificent one, but there is hardly a tree left, nor any young growth. Men are beginning to saw the great stumps off close to the ground, and work up the wood for fuel and ornamental veneers, even down to the larger roots. I am told that the blackened stumps in this district are estimated to contain two million feet of valuable and marketable Redwood. They are dead beyond peradventure, and this is the best thing to do, of course. But it makes a man heart-sick to see how clean the sweep has been. Fifty of the largest trees left scattered over the valley would have glorified Guerneville for ages to come. In the very streets stand stumps of trees that were thirty and forty feet in girth and three hundred feet in height.

The Guerneville "basin" extends east. At the head of the little valley Col. J. B. Armstrong, a prominent Ohioan, who settled here after the war, owns 800 acres of as fine Redwood as exists in the state. The best 400 acres of this he will leave uncut, and dedicate it to public use in some educational and permanent way that will preserve it forever. I spent long enough in the heart of this primeval Redwood forest to feel its almost unique value. It has not been smitten by an axe, nor is it pastured. The forest shows every type of Redwood growth: single trees, clumps of twos, threes, fours, and so on, up to circles of ten or twelve, about the roots of some giant of an earlier generation; seemingly solid walls of green banked against a ravine; open lawns, where tall Laurels and Oaks grow, slender as the Redwoods themselves. The very side-sprouts that grow up beside the Redwoods are as large as the pines of many other countries. The largest tree I measured was forty-seven feet in girth, and three hundred and twenty-five feet high. If Col. Armstrong's plans are carried out, and this superb forest is preserved, it seems to me that it will prove in the future one of the most valuable of gifts that the people of any American state have received from a citizen. What form the gift will take, or how its permanent value will be maintained, I have not asked. Col. Armstrong loves his forest with a great and abiding love, and he can be depended upon to secure its perpetuity for future students, botanists, and lovers of trees.

Niles, Cal. *Charles H. Shinn.*

The so-called "Grit" in Apple-twigs.

IF two Apple-twigs of equal size be cut with a budding-knife one may exhibit more of that quality which is known as "grit" than the other. Pear-twigs are more "gritty" than Apple-branches of the same size, while Cherry-twigs have less of this quality. With many horticulturists this grit, which is a resistance to the knife not easily defined, has been employed as a test for hardiness, and, therefore, is a quality of much interest to the fruit-grower and nurseryman.

In determining what the substance in question is, we may note that a growing twig is not gritty, this quality being associated with maturity of the stem. Thus, if we cut the tip of a "water-sprout," and compare the resistance there met by the knife, with that experience when a mature twig is cut, the difference is very evident. Again, if a mature twig is cut through its well-formed terminal bud the knife meets with none of the grit, but when the twig is severed a short distance below the bud the grittiness is strikingly prominent. A better way to determine the location of the grit is to pass the knife down lengthwise through the tip of the twig. In this way the knife runs easily down for, perhaps, a half-inch or more, when it strikes the point where the resistance begins. If another twig of the same sort has the terminal bud stripped from it, along with the bark and the thin zone of wood, there will be left behind a cone of brittle pith. Instead of breaking this stiff cone apply the knife, and shave the pith when the peculiar sensation of cutting the grit will be felt. This cone of pith consists of small cells, which are about as long as broad, having their walls unusually thickened and the cavities closely packed with starch. As the lower end of the twig is approached, the central portion of the pith is found to be thin-walled, without starch, while the wood-zone is thicker and serves to support the twig. In other words, near the tip the wood-layer is so thin that the pith within it must take a very prominent part in holding the bud, and, from the nature of the cells, brittleness, instead of flexibility, must characterize the upper two or more inches of well-matured Apple or Pear twigs.

It still remains to consider the nature of the grit of older parts of the twigs as, for example, at those portions which are used for cions—that is, several inches below the extremity of a branch. As the bark of all Apple or Pear twigs is nearly the same and offers none of that peculiar resistance to the knife, it may be discarded in the present consideration. The grit is, therefore, either in the wood-zone or the pith, or both. It has been already stated that the pith diminishes in grittiness as the distance from the grit-cone near the terminal bud increases, and, therefore, if there is a considerable grit in an old twig it probably resides in the thick ring or zone of wood. The outer portion of the pith may have undergone the process of lignification, and the thick wall of the cells thus resulting possesses the grittiness; but there is in such twigs a system of radiating plates of pith-like cells known as the medullary rays or "silver grain," composed of cells in the thick walls, and in that respect agreeing with the cells of the outer portion of the pith. These rays are very numerous in the twigs of the Apple or Pear, and during the winter are repositories for starch. Besides these plates of cells stretching from the pith to the cambium, or growing layer just under the bark, there are other thick-walled, square-ended cells running at right angles to the "silver grain"; these, also, bear starch, while the wood fibres, between them and the ducts and vessels, are without this wood substance. The wood itself offers more or less resistance to the knife, but it is not of that kind caused by "grit." It is easy to see that making a section lengthwise of the grain is principally a splitting process after the knife is once set between the fibres, which are long and slender. In cutting through the pith, in whatever direction, owing to the nearly cubical shape of the cells, there can be no splitting, but, instead, the knife must pass through one hard lignified cell-wall only to encounter another just beyond—a condition of things that produces the sensation of grittiness.

The statement that the grit encountered in cutting twigs of our common fruit-trees is due to the presence of a deposit of sand in the wood is not borne out by microscopic examinations. The nature of the tissue composing a whole or part of the pith and of the "silver grain," which is only the pith pressed into plates by the growing wood, does not call for any such theory.

This lignification of the pith and medullary rays and their storage with starch is one of the best indications of the maturity of the twig, and that is as far as one dares to go in his deductions from these conditions. That it may be an indirect index of hardiness is to be presumed, for it is undoubtedly true that immature twigs are not hardy, and it has been shown that such do not present the quality of grittiness.

It is also an observed fact that the lignified pith cells are the only ones containing starch, and in freshly-gathered twigs in midwinter these thick-walled cells invariably contain starch. The grittiness, therefore, becomes a fair index of the amount of starch stored as a reserve-food material in the twig, and the presence of such a substance, other things remaining the same, becomes a possible criterion by which to judge of the adaptability of the plant to the conditions which surround it. In other words, of two varieties of apples the one having the greater grittiness would be the one which had stored up the larger amount of reserve-food substance in the form of starch, and from that fact it might be inferred that it was the healthier, had better prepared itself for the winter, and, therefore, for growth the succeeding spring. That it would live longer and bear more fruit than its less provident neighbor must be determined by orchard test, and not by microscopic investigation. The variety which matures its wood most thoroughly and stores the most starch may start into vigorous growth too early in the spring and be injured, perhaps, seriously thereby. Grittiness is, therefore, a good sign, but it does not become a perfect test for hardiness.

Rutgers College, New Brunswick, N. J. *Byron D. Halstead.*

Entomological.

The Asparagus Beetle.

THIS summer, Asparagus growers in eastern Massachusetts have been making complaints of injuries to their plants caused by the Asparagus beetle (*Crioceris Asparagi*), generally indefinitely spoken of as a "fly," "slug," or "bug" by those making its acquaintance for the first time. In some gardens the plants have been completely defoliated, leaving only the bare, dry stalks and branches, much to the injury of the vitality of the roots and of the value of the next season's crop.

Remedies do not seem to have been generally known or used, and in some cases it is to be feared that more injury has been done to the plants in efforts to exterminate the pest than if they had been left undisturbed.

Late in July, upon finding the Asparagus badly eaten by the insects, some gardeners have cut down every living shoot that was above ground, and kept all cut back for some time in the hope of "starving out" the insect. By cutting away the tops so late in the season much injury is done to the roots, and, as many of the larvæ will have reached full growth, they are not starved but merely enter the ground or find some other suitable place to pupate or prepare a new lot of beetles to deposit eggs on fresh shoots when they appear. The first lot of beetles begin to deposit their eggs in the spring, at a time when the Asparagus is cut daily for market and table use, and if growers were careful to keep down all seedling or stray shoots, and destroy all those that have become wild, during this period, it would help to starve out the first brood at least, because the beetles would be forced to deposit their eggs on the shoots that were to be cut for use, and they would thus be destroyed before hatching out. If this practice is followed by all the growers in any district it will have the effect of materially lessening the numbers of the pests, so that later in the season they will not be so troublesome.

As soon as the young larvæ appear, after the marketing season is over and the Asparagus is allowed to grow naturally, the use of insecticides should be resorted to, and repeated during the summer whenever the insects recur in any number.

Fresh slacked lime dusted on the plants is found by many to be very effective, and one of the cheapest and most easily applied of remedies. It is efficient only against the larvæ, the beetles being unaffected by it. Arsenical poisons, such as Paris green or London purple, used in the same manner and proportions as for the potato beetle, are as effective against the Asparagus insect as they are in preserving the potatoes.

The Asparagus beetle is an importation from Europe, and its first appearance in this country was on Long Island, New York, thirty years ago. It soon became very destructive to the large plantations on the island, and a few years later it was doing much damage in New Jersey. Since then it has slowly spread over a large territory, estimated by some to be less than at the rate of twenty miles a year. The beetle averages about one-fourth of an inch long, and has the head, attennæ, legs and under side of the body black. The thorax is red with two long black spots on the top. The wing-covers are black with three large lemon-colored spots on each. The middle and the anterior spots are often joined, and appear as one irregularly-shaped long spot, and then the black has very much the

shape of a cross with a broad shaft. There is an orange band around the margin of the wing-covers. The dark brown eggs, which are deposited by the beetles on the stems, branches or leaves are set on end, and are a little over one-twentieth of an inch long. These eggs hatch in about a week or a little more, and produce larvæ which grow rapidly and attain full size in ten or twelve days. They are then about three-tenths of an inch long, fleshy and slug-like, with the body much larger towards the hinder part than towards the head. The color of the body is a dull ashy-gray, and the head and legs are black and shining.

The time necessary for the insect to go through all its stages, from the egg to the imago, or perfect beetle, is about thirty days.

To-day (August 5th) the beetles and eggs are very abundant in many gardens about Boston, and fully-grown larvæ are also quite plentiful.

Another species of Asparagus-beetle, known as *Crioceris 12-punctata*, also an importation from Europe, made its appearance near Baltimore some years ago, and is said to be very injurious if neglected. As yet, however, it is not reported as having come very far north.

Jamaica Plain. *J. G. Jack.*

Notes Upon Some North American Trees.—VI.

Acacia Farnesiana, Willd.—This plant is now so widely distributed through the tropical and sub-tropical regions of the world, having been long cultivated for the fragrance of its flowers, that its native country is not easily determined. Mr. Bentham (*Trans. Linn. Soc.*, London, xxx., 502) was of the opinion that it was indigenous to western America from northern Chili to Texas, as well as to northern and north-eastern Australia, and perhaps to south tropical Africa. It is one of the most commonly cultivated trees in all the towns on both sides of our Mexican boundary, and I have found it growing spontaneously on the Texas desert between San Antonio and the Rio Grande, in situations where it does not seem possible that it could have been introduced. It seems desirable, therefore, for these reasons, to include this beautiful species among the trees of our territory.

Acacia flexicaulis, Benth.—This species must be included also among the Texas trees. It is the largest and, after *A. Farnesiana*, the most beautiful of the Acacias, growing naturally within the limits of the United States. It is found abundantly on the dry plains, which rise from either bank of the lower Rio Grande, forming a round-headed evergreen tree attaining a height of twenty-five or thirty feet, with a short, stout trunk, sometimes twelve to fifteen inches in diameter. It is known locally as "Mexican Ebony," from its very hard, compact and beautiful, dark wood, which is greatly prized by cabinet-makers, and for posts (as it is almost indestructible when placed in contact with the ground) and for fuel. The pale-yellow flowers are delicately fragrant. The large seeds of this species are sometimes boiled by the Mexicans while they are green and are said to be palatable and nutritious; or, when fully ripe, they are toasted and used as a substitute for coffee. The illustration upon page 401 of this issue, from a photograph made by Mr. Pringle last year on the lower Rio Grande, shows the habit and the general appearance of this tree, but does not display, of course, the beauty of its bright and lustrous foliage.

99. Acacia Berlandieri, Benth.—This plant, so far as I have been able to see it in Texas and in Mexico, or to learn about it from others, is never more than a shrub, and it may be dropped, therefore, from the list of our trees.

Pithecolobium brevifolium, Benth.—I have found this species growing as a slender tree, twenty-five to thirty feet high, on both banks of the lower Rio Grande, although more common and of larger size south of the river. It should properly find a place, therefore, in the North American Silva.

109. Prunus Capuli, Cav.—This name for the widely-distributed Cherry-tree of Mexico and the Pacific coast of Central and South America, appears to have been published first by Sprengel in his "Systema Vegetabilium," ii., 477 (1825); and Mr. Watson has pointed out (*Proc. Am. Acad.*, new ser., xxii., 411) that an earlier published name is *P. salicifolia*, HBK, "Nov. Gen. et Sp.," vi., 241, *t.* 563 (1823), although, as Mr. Watson suggests, the name *Capuli*, always credited to Cavanilles, may have been published by him before it was taken up by Sprengel (*l. c.*).

113. Prunus ilicifolia.—An interesting variety of this tree, with nearly entire adult leaves, was first noticed by Mr. W. S. Lyon on Santa Catalina Island, off the California coast. He referred it (*Botanical Gazette*, xi., 202, 396) to *Prunus occidentalis* of Nuttall—a name which Nuttall seems never to have used for any western American plant, and which had already been appropriated long ago by Swartz for a West Indian tree. Mr. Edward L. Greene found this plant upon Santa Cruz Island, and notes (*Bull. California Acad.*, ii., 7, 385) the resemblance to the mainland *P. ilicifolia*, and the fact that the smaller spinose-toothed leaves of this last are identical with those on young seedlings found on the island. Mr. Brandegee examined the trees on Santa Cruz and Santa Rosa Islands last summer, and in his "Flora of the Santa Barbara Islands" (*Proc. California Acad.*, 2 ser., i., 2, 209) it appears as *Prunus ilicifolia* var. *occidentalis*, and this name should, therefore, be retained by those authors who consider the insular tree as a more robust, entire-leaved variety merely of *Prunus ilicifolia*, although the name, in view of the West Indian species, is not a fortunate one. The island tree, according to Mr. Greene (*l. c.*), rises to a height of twenty-five feet, with a stout trunk covered with rough dark bark, and a compact, well-rounded head. The leaves are evergreen, ovate-acute, three to four inches long, entire, or sometimes remotely denticulate, or rarely spinose-serrate. The fruit is larger, but not otherwise different from that of the mainland tree. According to Mr. Greene (*l. c.*), "the thin pulp is sweet, with also a bitter-almond flavor, but no acidity or astringency." On Santa Rosa Mr. Brandegee found "it confined to the bottoms of the cañons—much larger and more tree-like than in Santa Cruz." He notes that in the Santa Inez mountains, near Santa Barbara, the leaves of *P. ilicifolia* sometimes have entire margins.

114. Vauquelinia Torreyi, Watson.—This Arizona tree was first described by Dr. Torrey (Emory's Rep., 140) as *Spiræa Californica*. Mr. Watson, in referring it to its right genus (*Proc. Am. Acad.*, xi., 147), dropped the specific name under which it was first described (for the reason, no doubt, that this tree has not been found within the actual limits of the State of California), and substituted for it the name of the first describer. Instances are not wanting in the annals of American botany of geographical specific names having been improperly applied; and unless all such names are to be corrected, it would be better to retain the earliest specific name for this plant, which would thus become *Vauquelinia Californica*.

122. Cratægus rivularis, Nutt.—This species, founded on specimens collected "in the interior of Oregon" by Douglas, I am unable to distinguish specifically from *C. Douglasii*. The leaves on the original specimen are narrowly lanceolate and simply serrate, as are those of the common form found in the Wasatch Mountains of Utah, where this plant is not rare. But this narrow-leaved form passes gradually in northern Montana, where the black-fruited Thorn abounds along the margins of mountain meadows and streams, into that with broad, doubly serrate, and often incisely cut and lobed leaves. The two forms mingle in the coast region of Oregon and Washington even, and vigorous shoots of the Utah plant are apt to display the cut leaves which have been largely depended on to separate the two species. The stipules (always an unreliable character in Cratægus) and the calyx-lobes, which are described as "usually glandular," cannot be depended on to distinguish these two forms. The spines, which are rather more abundant on the coast plant than on that of the interior, are the same, as are the fruit and its stones. The flowers of the latter are somewhat smaller. I should propose, therefore, to call the narrow-leaved black-fruited

Thorn of the dry interior region west of the Rocky Mountains, which is a stout branching shrub rather than a tree.
Crataegus Douglasii, var. *rivularis*.* *C. S. Sargent.*

New or Little Known Plants.

Uniola Palmeri.†

IN 1885 Dr. Edward Palmer collected, near the mouth of the Colorado River, some specimens of a grass from which he said the Cocopa Indians obtained the seeds in large quantities and used them as food. At the time he was there the grass was out of flower; he found only a few disconnected spikelets, and the botanical characters could not well be determined. In April of the present year Dr. Palmer, being employed by the Department of Agriculture to make botanical investigations, made another visit to the locality and obtained in that region specimens in good condition, enabling me to locate the plant botanically. As the genus Uniola is defined by Bentham & Hooker, our grass must be considered as of that genus. Its general appearance and habit is that of Distichlis, from which it differs in having four of the lower glumes (instead of two only) in each spikelet empty, *i. e.*, without palet or flower, and in the disarticulation of the rhachis between the spikelets of both sexes—that is, the spikelets break apart between the several flowers when mature. This disarticulation occurs also to some extent in the fertile spikes of Distichlis, but not in the male or infertile ones. On the other hand it differs from Uniola in its dicœcious character, and here agrees with Distichlis. It seems, in fact, to connect these two genera, but so long as the two are kept distinct it must stand as Uniola. Specifically it is new, and I have given it the name of *U. Palmeri*.

The following notes I collect from Dr. Palmer's letter:

The specimens were collected at the Horseshoe Bend of the Colorado River, thirty-five miles south of Lerdo by the river, and twelve to fifteen miles from its mouth. This is the most extensive locality of the grass, thence extending down to the mouth of the river. It covers a space of from one to twenty miles wide, and occurs on both sides of the river. It is estimated that there are from forty to fifty thousand acres covered with this grass. It grows from two to four feet high, from strong, deep root-stocks, frequently many culms from the same root. The stems are covered to the top with the sharp, stiff leaves. The sterile plant grows more or less mixed with the other, but at times in masses entirely by itself. Dr. Palmer noticed several forms. One of these is more slender, with the leaves shorter, more numerous and more finely pointed. This, he says, grows on land that has but little overflow. Where, by changes in the river, any patches are left above tide-water, they soon die.

The Indians come together here at the proper season,

Fig. 123.—Acacia flexicaulis.—See page 400.

*CRATÆGUS DOUGLASII, var. RIVULARIS, frutex glaber, 10–15 pedalis, foliis ovatis, lanceolatis, obtusis vel acutis, argute serratis, inciso-serratisve, stipulis acutis inciso-glandulosis.

† UNIOLA PALMERI, Vasey.—Culms wiry and rigid, sometimes cane-like, two to four feet high, from subterranean root-stocks, often much branched, and many culms from one root, leafy to the top. Leaves distichous (sometimes less than an inch apart, sometimes two to four inches apart), smooth, rigid, erect, involute, with long, pungent apex, the lower two to four inches, the upper four to eight inches long and exceeding the panicle. Ligule nearly obsolete, with a light woolly tuft at the angles. Raceme of the staminate plants six to nine inches long, narrow, the branches mostly in twos and threes, the lower ones one to three inches long, erect, compound below; spikelets eight to ten lines long and about two lines wide, 7–9 flowered. Racemes of the fertile plant shorter, thicker and more condensed, being four to six inches long, and the branches sessile or short-stalked; spikelets usually one to one and a half inches long, 7–9 flowered, the two lower pairs of glumes empty; outer pair of empty glumes five to six lines long, the flowering glumes six to seven lines long, lanceolate and acuminate, with a stiff, pungent point, smooth, obscurely many- (about 20-) nerved; palet one-fourth shorter than its glume, with about three nerves on each side of the strong, deep keel; grain linear-oblong, three lines long, not including the thickened, more or less united style.

in April, and gather this, to them, important article of food. As its quantity depends on the overflow of the tides, and the tides are sure to occur, they have an assured crop without any other labor than gathering and caring for the grain. The gatherers enter the fields as soon as the tides have entirely run off, where the soil is an adhesive clay so soft that the Indians often sink nearly to their knees in gathering the grass, and as soon as the tide begins to flow they return with the result of their labor to their camps. It is quite difficult to pull up the plant by the roots, as these are often two to four feet long, but the stems are brittle and easily break off above the root. The Indians, in harvesting, use any old knife, or, if they have none, they take a flat piece of wood and form an edge on each side, and with this they sever the stems, the left hand grasping the tops, which are then thrown into a basket. The rigid, spiny-pointed leaves make the process a painful one. The grain has to be cut when a little green, because of the easy separation of the spikelets. In order to dry the heads as quickly as possible, large fires are made, and the heads are piled around so that the flames penetrate between them. When they have been sufficiently exposed to the fire a stick is used to thrash the heads, which breaks up the spikelets, but does not separate the chaff or glumes from the grain. The dried and dissevered spikelets are then taken to a piece of ground prepared for the purpose, and the Indians tread upon and rub the grain between their feet until the seeds are shelled out.

This process is more easily accomplished after the grain has been exposed a while to the sun, but in any case it is pretty trying to the feet because of the sharp, stiff points of the chaff. The action of the tide knocks off and carries away considerable of the grain, but this is left in rows at the edge of the contiguous dry land, and the Indians gather much of it and rub it out. They have to be expeditious in their harvest, as wind storms are liable to arise and destroy or injure the product of their labors.

Dr. Palmer was accompanied on his trip by two gentlemen connected with the United States Fish Commission, who took photographs of the grain-field, and of the thrashing and treading out of the seed from the chaff.

It is not yet ascertained how far up the river this grass extends, but probably to the limit of tide-water, and in this case it will yet be found within our boundaries. The related *Distichlis maritima* grows not only on the sea-coast, but in nearly all saline and alkaline grounds in the interior of the country, but we cannot infer from that fact that this species might be cultivated outside of the reach of the tides.

Washington, D. C. *George Vasey.*

Foreign Correspondence.

London Letter.

THIS being the jubilee year of the Royal Botanic Society, it was thought desirable to celebrate the event by a floral carnival in Rose time. It has been a commendable attempt to introduce the pretty, if frivolous, customs of the flowery Riviera, so familiar to the sojourners at Nice in early spring, when the hills and valleys teem with blossom. The custom may migrate northward and take root, now that "society" has set its seal of approval upon it, but, to our sober minds, some of the items in the schedule seemed to be absurdly extravagant. The flower-bedecked horses and carriages were, however, not so absurd as the "triumphal canopies," "May-poles," "bridesmaids' arches," and "wreaths on poles," which only served to illustrate how insipid flowers become when maltreated in a way that cannot by courtesy be termed artistic or tasteful. The most tastefully decorated Victoria carriage and pair of horses was quite a flower-garden. The whole body of the carriage, from the wheels to the pole-end, was glowing with flowers, prettily arranged in harmonious colors; while the horses were caparisoned with emerald-green harness and trappings and roses. I heard that this was the work of a professional floral decorator from Nice, and that no less than £20 worth of ribbon was used on the horses. It won the highest gold medal besides a prize from the Princess of Wales, who was present to distribute the prizes. Some of the pony cars were extremely pretty, especially the first-prize one, which was smothered with roses, paneled in different colors, the predominant variety being the pink La France. One pony was wreathed with the long, slender flower-stems of *Tropæolum speciosum*, with scarlet flowers; in another, the trappings were all of roses. The decorated riding-horses were not remarkable, but the children's carts and sedan-chairs, loaded with live babies almost hidden by flowers, were, perhaps, as popular as any part of the show. The arches, May-poles and canopies were not worthy of favorable comment, neither were the decorated boats on the lake, which were absurdly wreathed with tender tropical flowers, and the sterns crammed with pot-plants such as Crotons, Ferns, and Palms, which seemed quite out of place. Simplicity should have been the aim of the decorator, and it would have been an easy matter to have adorned the boats with bright, hardy flowers, which would not have withered so quickly. Besides, flower-bedecked boats seem quite out of character in our climate under leaden skies and drenching rains.

The display of Roses, or "Feast of Roses," in the exhibition tent was a much-admired feature, for some of the leading Rose-nurserymen contributed large and full collections, the most extensive being that from the great house of W. Paul & Son, of Waltham Cross, who worthily won the chief gold medal with their display. This firm made a commendable attempt to break through the orthodox style of exhibiting cut Roses, by arranging their blooms in masses of distinct and contrasting or harmonizing colors, marked out by geometrical yet graceful lines, and relieving the flatness by groups of pot Roses, Ivies, and other shrubs. The flowers lose nothing, but gain much, in being set out in this way, and the flower-loving public evidently appreciate the innovation, judging by the admiration it bestowed upon this Waltham Cross gathering. The "feast" was not exclusively of Roses, many other classes of plants being shown by the leading houses in the trade, and, perhaps, none were so remarkable as the magnificent group of Begonias, from the celebrated raisers and growers of these popular flowers, the Messrs. Laing. In their large and representative group one could see all types of Begonia and the various styles of growing them, from the prim staked-up "specimen" plant to the graceful drooping plants in suspended baskets. It is very evident that this modern race of Begonias has taken quite a hold upon the public. Even ladies of the most refined taste in colors admire the great flowers of the most fiery scarlets and reds, perhaps because these colors glow in flowers of exquisite form and substance. This season's crop of new varieties is unusually large, but as most of them are still under trial and nameless I must reserve comment upon them for the present. They are obviously all improvements on the older sorts, and, taken altogether, they serve to illustrate more forcibly than ever the praiseworthy efforts of this firm (which has identified itself with Begonias) to bring this valuable race of green-house flowers every successive year to a still higher state of perfection. Begonias, as open-air flowers, have not made much headway with us, though now and then one sees examples of exceptional success in this direction; and on the Continent, where they enjoy more sun and heat than here, they seem to be supplanting the Pelargonium. I shall not soon forget the spectacle I saw last August in one of the parks at Zurich, in Switzerland, where there was a large mass of Begonias thriving and flowering in great luxuriance. The varieties were of the small-flowered class, not many removes from the typical *B. Boliviensis*, and they seemed much more suited to "bedding out" than the large-flowered sorts, which are more liable to be damaged by rains and winds.

Although this is the "off season" for Orchid bloom, there was quite a fine show of them at the "feast," and especially that from Messrs. Low, who had in their large collection some very choice kinds. Most interesting to me, because it was the first time I had seen it, was the new *Cypripedium Rothschildianum*, introduced a year or two ago by Messrs. Sander. I was somewhat disappointed with it, perhaps because I had heard so much laudation of it. But it is not one of those plants that "take your breath away" at first sight. It looks to be a near ally of *C. lævigatum* (now called *C. Philippinense*), the flowers being about the same size. The slipper is like that of *C. Stonei* in shape and color, the dorsal or upper sepal is shaped and striped like that of *C. lævigatum*, but the long lateral sepals which stretch out at right angles are pointed and copiously spotted, and unlike those in any other species. A much prettier and probably a more really valuable Lady-slipper is *C. bellatulum*, with which Messrs. Low seem to be plentifully stocked, as they showed the flowers of it on trays like Pansies. Everybody admires the wax-like flowers so quaintly blotched with black-crimson, and on the plant they

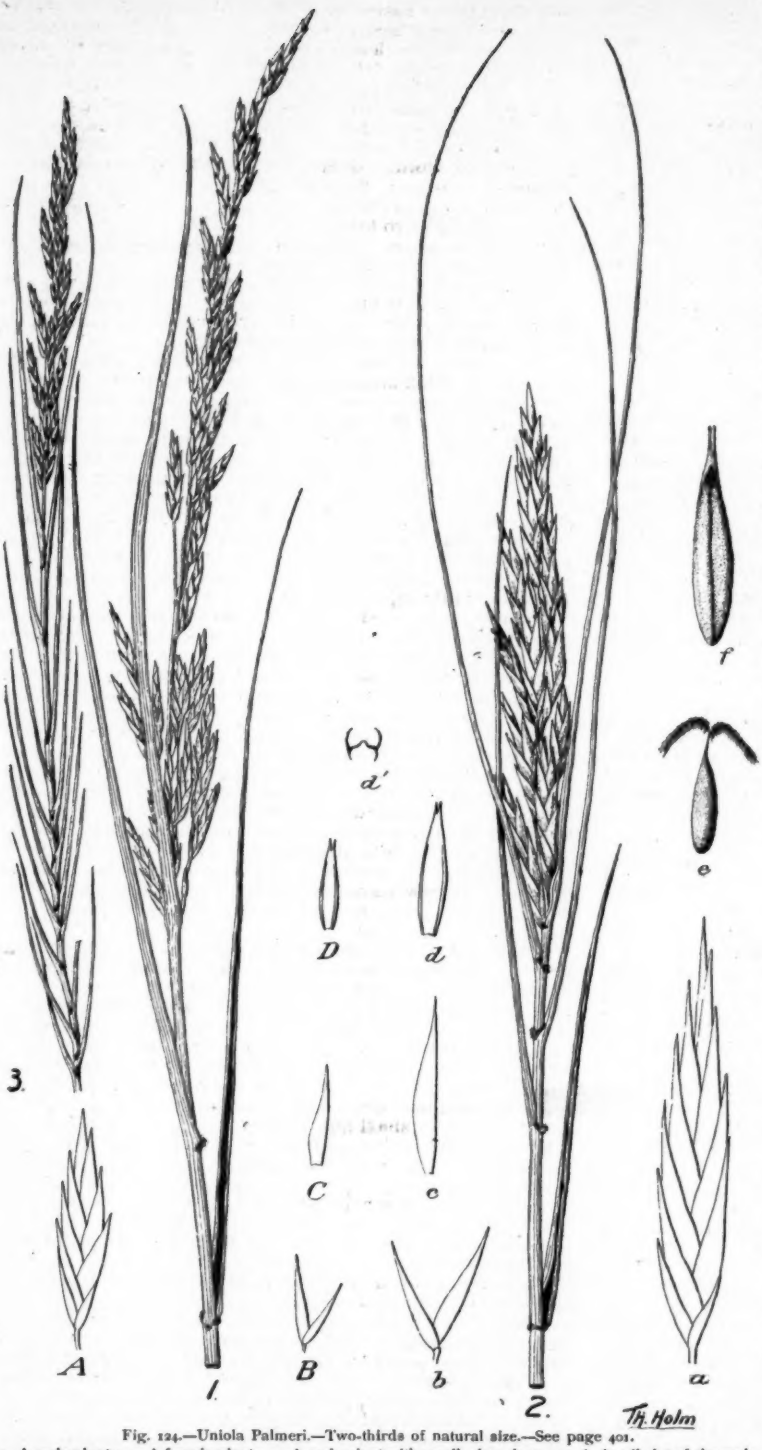

Fig. 124.—Uniola Palmeri.—Two-thirds of natural size.—See page 401.

1. A male plant; 2. A female plant; 3. A male plant with small, close leaves; *A.* A spikelet of the male plant; *B.* Empty glumes of same; *C.* Flowering glumes of same; *D.* Palet of same; *a.* Female spikelet; *b.* A pair of empty glumes of same; *c.* A flowering glume of same; *d.* Palet of same; *d.'* A transverse section of the palet; *e.* Young fruit with the styles united; *f.* Older, ripe fruit, with the styles separate. The dissections are magnified three diameters, excepting "*f*," which is magnified four diameters.

are set prettily amidst the handsomely marked foliage, and last for weeks in perfection. Though the present is the lowest ebb of the Orchid-flower season, there is much activity among Orchidists on account of the numerous novelties, genuine and otherwise, that appear at the auction-rooms. Cypripedium seems to produce most novelties, and this week there are to be sold the "new and beautiful *C. Savageanum*," the new *C. Seegerianum*, *C. Pageanum*, *C. Buchanianum*, *C. Godseffianum*, *C. Winnianum*, *C. regale*, *C. pavoninum* and *C. Javanico-superbiens*. Here is a list for the specialists in Cypripedia, who probably are the only people who will be able to define and appreciate the subtile differences between them and well-known species. As to the names of these so-called new Orchids, it seems as if we are getting from bad to worse. Every one assumes that he has a right to christen Orchids, now that they cannot be sent to Reichenbach, and the result is that they are making confusion worse confounded. Instead of one competent man describing new Orchids, we have two or three, and their descriptions of the same plant do not agree, and, in some instances, old species have been described and named as new. The work could be done very well at Kew if the cultivators and importers would only be loyal to the recognized headquarters of botany in this country. Let us hope that no other large family of plants will suffer from such excessive popularity as Orchids. Among the list of the newest novelties I see a pure white variety of our old favorite, *Dendrobium nobile*, and if this does really come up to description we shall have indeed a valuable addition to winter flowers. How many have sighed for it, and how often have collectors been instructed to be on the look-out for it at home and abroad. It will be interesting to see what figure such a rarity will be sold for. It must be white and nothing but white to be of value, but this has to be proved. A pure, colorless variety of *D. nobile* is what florists want for winter work, but it will be many years probably before they will get it. When I was in India I was continually on the look-out for it, but no one had seen or even heard of it. *W. Goldring.*

Cultural Department.

A Few Summer Pears.

I AM asked to name a list of Pears for family use by one who is fitting up his garden in a newly-acquired home, and having but little room, and getting well on toward the meridian of life, he wants trees that will be likely to yield fruit as quickly as possible, and of quality fit for table use. As a rule, the actual popular knowledge of Pears is limited to the Bartlett and Seckel, and, perhaps, a few old-timers, which, in the childhood of people, like our enquirer, were voted excellent. People of this class have usually given some study to the books and the catalogues of some eminent nurserymen. They have probably made a list after much thought, only to have some acquaintance or tree agent advise an entirely different one. Such persons should be told at the outset that all Pears do not succeed equally well in all localities. Besides this, individual tastes differ widely. One will prefer a sweet Pear to an acid one, and another the reverse, so that if these, and other characteristics, are fairly stated, they can make the most satisfactory selection themselves.

Pears do best generally on a stiff, heavy, rich, well-drained soil, such as a clay loam. The earliest Pear I have ever grown is the Summer Doyenne. It usually ripens here from the 15th to the 20th of July, and lasts about a week. It is small, about the size of a Seckel, good specimens measuring about one and a half inches in diameter, nearly round, sweet, with a handsome red cheek. Altogether it is a very agreeable and welcome fruit so early in the season. The tree is healthy, a good grower, and an early bearer. It is sometimes called a summer Seckel.

The Madeleine comes in at the same time, is nearly, or quite

twice the size of the preceding, and of an entirely different character, light-green, juicy, and slightly acid, and more refreshing in character on this account, but its season is very short. It decays at the core so quickly that it is gone before one is aware of it. The tree is a good grower and an early bearer.

The Bloodgood is another of the small summer Pears, and is better in quality than either of the foregoing, but my tree has never done well. The fruit is yellow, sweet, and of excellent flavor. Were I to plant again simply for family use, I would group these three, if not more, on one tree, by grafting. This at ten or fifteen years old would yield enough to answer the purpose of an early desert fruit and at the same time give a variety.

Following these comes Giffard, a larger, better Pear, of short duration. The tree is a slender grower, and succeeds best when top-grafted on a more vigorous variety. The next to ripen with me is Clapp's Favorite, a handsome Pear, fully as large as the Bartlett, and in its prime now (August 12th); not a rich or high-flavored Pear, but juicy and agreeable. The tree is a strong grower and an abundant bearer. It is in season about a week, and like all Pears must be gathered while hard, and house-ripened to get at its real merits, and when fit to eat it must be eaten. When Pears reach maturity no days of grace are added. After ripeness comes sudden "heart-failure." No one ever enjoys a perfect Pear who waits for it to ripen on the tree.

My next Pear is the Tyson, a sweet, rich, juicy Pear, about half as large as the Giffard, but better in quality and in keeping. The tree is a good grower, and is generally tardy in coming into bearing, but when it commences business it attends to it, yielding abundantly in alternate seasons, and seldom missing a fair crop on the off year. A city friend asked my advice about grafting over a tree of this variety a few years ago. He said it never bore anything, and he was tired of waiting. I suggested that it might reward him in time, and advised him to confine his grafts to a few limbs. This might tend to induce earlier fruitfulness in the tree, and then he could judge better as to the probable advantage of further changes. Last year the tree commenced declaring dividends, and this season it is loaded, and so well is the owner pleased with it that he has decided to spare it, and if any limbs are cut it will be the grafted ones.

Ott comes next, a seedling of the Seckel, a very sweet, good Pear of about the same size. The tree is healthy, a good bearer, and very much like the Seckel in growth.

I mention the Rostiezer because nearly all authorities do, but it is not a favorite of mine, and it does not deserve, in my opinion, the commendations often bestowed on it. The tree is a healthy, sprawling grower, and bears well. The fruit is small, hardly averaging as large as Madeleine, with a coarse, gritty flesh, covered with a dark thick skin, often with a ruddy cheek, sweet, and in good specimens tolerably high-flavored. These, however, are the exception; they usually rot before presenting any appearance of ripeness. With me they seldom present such an appearance, and are altogether unattractive.

I might mention also the Rousselet Stutgart, a very good Pear, with a peculiar spicy flavor, and generally much admired. It is of far better quality than the Rostiezer, but it has the same fault of most of our summer Pears—soon ripe, soon rotten. The tree, however, is healthy and productive.

Next comes Boussock, a large, handsome yellow Pear of good quality, with flesh a little coarse, but juicy. The tree bears abundantly of fruit that is generally fair.

Now comes the Bartlett, the universal favorite, so well known that a description is unnecessary. Some seasons it develops a musky flavor, not agreeable in a dessert fruit to many palates; but it is the universal favorite for canning, and so firmly has its name and reputation become fixed in the minds of the people that they will call for it out of season, and unscrupulous venders will not hesitate to palm off on those who know no better not only other Pears, but other trees, too, when opportunity offers. It is really an autumn fruit here, ripening in September.

Then there is the Souvenir du Congres, an early, handsome Pear, and larger than any I have named, but quite inferior for dessert purposes. It answers for cooking, and I occasionally sell Pears of this variety, hoping, however, that purchasers will not try to eat them.

And what about the Comet-Lawson? Well, it is said to be early, and as pretty as a Pink. But my grafts have all died; and there are Pears in the above list that will answer every purpose better.

Manning's Elizabeth is a Pear which, according to a recent authority, is the best early Pear. I have failed, however, to find any merit in it that would justify me in keeping a tree of it, and have grafted over the only one I have. It is not as early as the above-named, and about as poor an apology for a Pear on my ground as can be conceived. Perhaps it would do better on light soils. I might add notes on Washington, Catherine Sterling, Miller's Early, and many more, not omitting the Summer Bell (Windsor), an excellent old-time favorite for cooking, and still as good as ever for that purpose; but the list is sufficiently long for the summer kinds. Pears for autumn will be spoken of in another paper.

Montclair, N. J. *E. Williams.*

Memoranda from a Northern Garden.

THE cool, wet season, especially at the north, while unfriendly to the Potato-crop, has been very favorable to the true root-crops. In no recent year have Beets, Turnips, Carrots and Parsnips made a finer growth.

The lessons of this season are many, and those who have lost by their crops may, in some degree, make it up by the teachings of experience. Rust and blight of the Potato are fungoid diseases; but the fungi are destructive in proportion as a favorable nidus, as well as a favorable season, attends them. Early-planted Potatoes of early kinds, well fed with fertilizers, on light land, sloping enough to prevent water from standing, are yielding excellent and well-ripened crops, where, just in proportion as these conditions fail, the crop fails, too.

Long-rooted Parsnips, Carrots and Beets are getting yearly more out of favor, apparently quite as much with buyers as with growers. Still, they make a good appearance at vegetable-shows; and there is some sale for them, in spite of their inconveniences. To get the finest specimens, the soil should be evenly and deeply dug, and enriched with fine manure or fertilizer. I have found the best specimens where the rows crossed the spots at which roots had been pitted the winter before. They went to the bottom of the excavation—large, straight and with a perfect taper.

The advent and increase of many foreign insects, as well as some hitherto localized native species, like the Potato-beetle, have added greatly to the burden of garden-work. Where any advantage is seen, it has been for the benefit of commercial growers, at the expense of private gardeners, a large number of whom have given up the culture of fruits and vegetables so attacked. In small village gardens, Currants and Gooseberries, Onions, Cabbages, Turnips, Radishes and Potatoes have been in many cases abandoned; and the interest in this sort of gardening is greatly cooled by the troubles incident to insect-fighting.

Amateur gardeners, engaged in a contest with insects, commonly fail in not applying the remedies promptly at their first appearance. The Currant and Gooseberry worm must be met with the hellebore douche at the first hatching of the eggs, which is contemporary with the first bloom. As for the various root-worms of the anthyomia race that attack all the cruciferous and alliaceous vegetables, no practical methods suited to small gardens seem to answer, though lime-water, freely applied, or weak lye of wood-ashes, can sometimes be made to succeed.

Undoubtedly a rapid growth, secured by ample and deep fertilization, and aided by irrigation, enables the market-grower to get pretty good crops of Cabbages, Turnips, etc.; but even these are glad, when they can, to get hold of spots of fresh ground, or a new "burn," where they can take a few crops before the enemy has found them out. It seems a pity that crops once so easily and cheaply grown, should now have become costly, far beyond their intrinsic value to the buyer, on account of these difficulties.

The worst of these insects are imported, and most of them did not reach our shores until after the advent of the trans-Atlantic steam service. They were brought over in the steward's stores, the waste from which was thrown out at landing. In this way we got the Currant-worm and the Cabbage-worm, by the way of Quebec. Both of these have reached northern New England, and spread southward within the last twenty years, while, unfortunately, the parasites that keep them down in their old home did not come with them.

We have heard a good deal about importing these parasites, and it does seem as if it might be successfully done at no great expense, considering the ravages now made in our gardens by the unchecked enemies. English readers of this journal, or European entomologists, at least, should be able to give some practical information on this subject, which, so far, seems to have been inefficiently and unintelligently met on this continent.

Newport, Vt. *T. H. Hoskins.*

Aquatics in Small Gardens.

HAVING made an experiment in the culture of water plants in my small garden (part of a city lot), with very satisfactory results, I should like to call the attention of other amateurs, especially growers of hardy plants, to some of the possibilities of the water-garden and its surroundings—and especially of the surroundings—for this feature has been somewhat neglected by the numerous writers on the subject. Owners of the smallest gardens, if sunny, will find a water-garden an attractive and useful feature and a very slight trouble; if there are any difficulties in cultivation I have yet to find them. The catalogues of dealers in these plants give full particulars as to construction of tanks, etc., but, in a primitive way, barrels or casks cut in two answer very well, though rather cramped quarters laterally for vigorous plants. There is an æsthetic objection to them, too, since their rims break up the water surface and reduce its apparent "breadth." It is well to sink the tubs several inches below the ground-level and slope the ground towards them.

A tank may be cheaply constructed of Portland cement alone in heavy soil, or with cement and bricks in a light porous one. Four to six inches of good fibrous loam with one-third well-rotted manure should be firmed in the tubs and covered with an inch of clean sand, to prevent the manure from rising; in this compost the plants are to be fixed carefully and firmly and tubs are then filled with water, after which water is only added as may be made necessary by evaporation, for the temperature should not be reduced unnecessarily. A pair of goldfish in each cask and a frog or two will keep the water sweet and clear, add life to the picture and interest the young members of the family.

Rare varieties of Water Lilies, etc., are held at high prices, but a visit to the nearest pond and swamp will furnish abundance of interesting material and enable one to study closely some of our attractive native plants. Our native Pond Lily may, of course, be had in many sections for the gathering. But it is in the surroundings of such a garden that I have been specially interested, as such a station is the place for many things, large and small, which are more or less unhappy in an ordinary dry border and flourish in moist earth and, perhaps, a somewhat humid atmosphere. Every grower of alpines will appreciate such a locality in his garden. It will be well to vary the height of the surrounding ground so that stations more or less dry may be had for various plants according to their requirements.

In the background may be grown bold groups of Cannas, Eucalyptus, some of the Irises, Spiræas, Caladiums, Bamboos, and the large grasses. The low and intermediate places will be havens for some of the Saxifrages, Primulas (*P. obconica* is a treasure there), Ferns, Lobelias and a host of little things. Peat-beds should be made near the borders in which to grow terrestrial Orchids and various peat-loving plants, which are so interesting and so difficult to care for in the borders. The clumps of peat will be sure to send up some interesting wildings. Of course, in planting out, it will be necessary to arrange that shade shall be provided over some of the shade-loving plants. If tubs are used their margins may be hidden by some of the vigorous creepers. My "lake" consists of four half-casks, three in a row, with rims touching, and the fourth in the angle between the second and third, to give some irregularity of outline. Three varieties of Nymphæa are blooming here with Water Poppies, Pontederias, and many more. Just now, under the shadow of some Caladium leaves, Shortia and Galax are both thriving in the peat and among the Ferns. Any amateur who is fond of other than routine work will be sure to find the water-garden and its borders, arranged as hinted above, a decided and, perhaps, novel pleasure, and he will be surprised, too, at the number and variety of beautiful plants that can be successfully grown and effectively grouped in the water and about its borders.

Elizabeth, N. J. *J. N. Gerard.*

Crotons as Bedding Plants.

AFTER a period of comparative neglect, this very handsome class of variegated-leaved plants seems to be gradually regaining a place in popular favor, though on a very different ground from that which they once occupied. Formerly they were only known and treated as stove-plants. And while splendid specimens have been produced for exhibition in this way, the plants so grown were, nevertheless, of little value for any other purpose, and in some cases the foliage was so soft from high cultivation that an exposure to the atmosphere of an exhibition-hall for three or four days was enough to ruin them for the remainder of the season.

We must admit the beauty of specimens four to six feet in height and almost as much in diameter, for such have frequently been shown in the past, but the knowledge of the method by which they were grown has, no doubt, caused a feeling of distrust in the minds of amateur cultivators in regard to the value of Crotons for their use, and the popularity of these noble plants has, therefore, seemed to diminish until recent years, when it has been abundantly proved that another field for usefulness and distinction lay open for them. That is, it has been shown that they possess great decorative capabilities when used as bedding plants out-doors. A notable instance of this was seen in the large Croton beds near Horticultural Hall, Fairmount Park, Philadelphia, where their beauty excited much favorable comment from visitors last season.

But when Crotons are used in this way it should be remembered that strong, healthy plants only should be chosen. Disappointment almost certainly awaits the planter who puts out small, weak plants in the hope that they may be improved thereby. And, again, the plants should be prepared for the change by removing them from the stove in which they may have been grown, and placing them in a light, airy house for some weeks before planting, for it is hardly reasonable to suppose that a plant grown in the close, moist atmosphere of a tropical house will be able to withstand the very variable conditions of a summer in this latitude without a hardening process in preparation for the change.

The plants should be well established in four-inch to six-inch pots, or even in larger ones, since they can be so arranged in the bed that the sizes will not interfere, and they should also be planted moderately close together, so as to give an immediate effect. The beds should be thoroughly prepared, and, if the ground is low, should be well drained and filled with a light, rich loam, or suitable mixture. As regards location, they should have plenty of sunlight, as this tends to bring out the rich colorings of the foliage and encourages stronger growth, and it may be added that if the season be dry it may be found necessary to give the bed a thorough watering at intervals.

As is quite natural from the native habitat of these plants (the South Sea Islands), they are quite susceptible to cold, and consequently should not be planted out too early in the season—from the 10th to the 15th of June being quite early enough in an ordinary season—and, since it usually is desirable to preserve them for use another year, it will be found best to lift them at the first sign of frost, so that they will need no nursing to restore them to their previous vigor.

When lifted in the fall they should be cut back quite hard, potted into as small pots as possible, placed in a warm, moist house, where they should have frequent light syringings to induce them to break into new growth, after which they may be potted on, as it becomes necessary, and treated as usual. Among the multitude of fine varieties of Crotons now in cultivation it is somewhat difficult to pick out a short list of sorts to be used for bedding-out, and the taste of the individual grower must be consulted in the selection of varieties, bearing in mind that the better plan is to select those of strong growth, distinct form and rich coloring. Almost any variety possessing these marked characteristics is likely to give satisfaction.

The following list may serve as a basis to work from—all the varieties are easily procured, distinct and reliable: *Croton Evansianum, C. majesticum, C. Mortii, C. Veitchii, C. Youngii, C. interruptum, C. longifolium, C. Challenger, C. princeps* and *C. pictum*—these giving enough variety to experiment with. Additions may easily be made to this list as required.

Holmesburg, Pa. *W. H. Taplin.*

Filling In About Trees.—It became necessary to raise the level of the ground two or three feet in a small garden, last spring, where a dozen young Pear-trees stood. It was not deemed worth while to transplant the trees, which were some fifteen feet high, and just commencing to bear, and therefore it was decided to fill in about their trunks and let them take their chances. The precaution was taken, however, of placing around them broken stones for a space of about three feet in diameter, a little earth only being spread over the top. The thought was that the stones might allow the air to reach the roots, and that the trees would thrive. When fall came all the trees were growing as well as ever, with one exception, a Bartlett, which showed a perceptible yellow color of foliage. Surrounding this tree, apart from the stones near its trunk, the soil was largely clay, while the others stood in loam, and this was thought to cause the difference. This season all the trees flowered profusely and bore immense crops of fruit. Ten per cent. of all that set was cut out, leaving still a large crop. The trees are doing well. The foliage is healthy, and,

with one exception, I see no difference in their usual behavior. This difference is that all the varieties seem to be perfecting their fruit earlier than usual. Clapp's Favorite, for instance, I have been accustomed to gather about August 10th, ripening them about the 15th. This year there was not an unripened fruit by the 5th of the month. Brandywine behaved in the same way. The Bartletts on the tree spoken of are changing color perceptibly, and Howells, an October Pear here, is in much more forward condition than usual, while Sheldon, Beurre Superfin, Lawrence and Kieffer are all ripening in their fruit with similar speed. Of course this early ripening shows the trees to be less healthy than they should be, but no other symptom of any lack of vigor is manifest. Fruit and foliage are perfect, so that I hardly fear any serious or permanent evil to the trees from the earth about their base.

Planting Deciduous Trees in September.—I read with interest Mr. W. C. Strong's article on transplanting evergreens in August. It is undoubtedly one of the best months in the year for the purpose, and, let me add, that deciduous trees can be planted to advantage much earlier than they usually are in autumn. There is no need of waiting for the fall of the leaf. If transplanted in September such trees would not only do well, but, in very many cases, they would do better than if removed later. A transplanted tree bears some analogy to a cutting. The propagator, in a green-house, knows, when he puts in a cutting, that the sand in which he inserts it should be warmer than the air, and so he gives bottom heat. When a deciduous tree is transplanted in September, the earth and air are in much the same relative condition as is desired for the green-house cuttings. The warm ground forces out fibres at once, and when cold weather sets in the tree is well established, having an abundance of roots to help it through the winter. This is not a matter of conjecture, but something that I have tested many times. If any reader, for experiment's sake, will transplant a small tree in early September, and dig it up again in October, the number of new fibres which have been formed will probably surprise him. If trees are planted before the leaves have fallen, these should be pulled or cut off.

Germantown, Pa. *Joseph Meehan.*

Fruits and Vegetables for Forcing.—Peach-trees in pots or boxes, intended for early forcing, should now be in a good sunny position out-of-doors, and where the growth is completed and the fruit-buds have plumped up, water should be gradually withheld, but not so long at a time as to allow the leaves to wilt so that the wood will shrivel. If the growth is weakly and not matured, give a few applications of liquid manure for a week or ten days. The best varieties for very early forcing are Alexander, Amsden, Hale's Early, and John Haas, the last a very finely-colored, good-flavored, new Peach. Tomatoes for winter-fruiting will now need strict attention. They should be in five-inch pots, and each plant must stand free and have room to strengthen. As to varieties, the Lorillard, Livingston's Perfection and Volunteer are all good. I had great success last year with cuttings taken from Volunteer as late as the first week in September. These cuttings were from plants that had set fruit very freely in the open ground. They were fully six inches long, and were put separately in thumb-pots placed in a shady green-house. They were rooted in a few days, and were then shifted into five-inch pots and treated the same as those raised from seed.

Preparing for Flowers.—Good Primulas, Cyclamens, Cinerarias and Calceolarias are very satisfactory, but when inferior, this is a group of plants which one does not care to see. It is at this season when all these plants must have attention. Seedling Primulas and Cinerarias should now be nicely established in two-and-a-half-inch pots, and kept in a frame shaded from the hot sun during the day, with the sashes removed entirely at night when the weather is fine. A syringing twice a week with weak tobacco-water prevents the white thrip from destroying or crippling the young growths. Calceolarias should be pricked out as soon as large enough in pots or pans half an inch apart, in soil that is shallow, sandy and friable, and when large enough they must be potted singly. All these plants should be grown quickly and never checked, and then they will prove among the most beautiful of our winter and spring flowers. *John Thorpe.*

Pearl River, N. Y.

Kale is one of two or three vegetables I always sow broadcast. I prepare the ground first as for sowing Flat Turnips, by putting a heavy coat of manure on a freshly-plowed surface and harrowing it in lightly. The seed is then sown much more thickly than Turnip-seed, using about six pounds of good seed per acre. The green curled Scotch is the best in quality and comes in use earlier in spring, but it becomes worthless much sooner than the Siberian, and a sowing of both should be made soon. *M.*

Crozet, Va.

Correspondence.

Forests and Civilization. V.—The North Woods.

To the Editor of Garden and Forest:

Sir.—The Adirondack region, as a place of resort for summer rest and recreation for those who love the wildness and freedom of the woods, is coming to an end. Not many persons see this now. Many never perceive that anything is coming till a good while after it has come. I know a man who is still lecturing against slavery, and especially against the sin of the churches in upholding the peculiar institution. He complained to me a few months ago that the great mass of our people are still indifferent in regard to this gigantic wrong. He has not learned that slavery is dead. If he had been a soldier on either side in the Civil War he might have found it out. The time is coming when the people who live in, by, and from the North Woods will awaken and find that their occupation is gone. Not many will believe this now. Some are even glad of the changes that put great tracts of the forest here into the hands of rich men, clubs, syndicates, and corporations, glad that, "if the state will do nothing, the woods will still be saved by private owners."

But a few of the great hotel men of the Wilderness begin to have a sense of something in the air which bodes no good to them. The effect of maintaining forest conditions over large tracts will, of course, be equally salutary in the retention and distribution of the water which falls upon them, whether the land is owned by the state, by individual citizens, or by clubs and corporations. This function of mountain forests, as natural storage reservoirs for water, is, perhaps, the most important of all their uses. But the Adirondack forest is valuable to the people of the state and of the country in several different ways. It should have been forever the source of inestimable benefits as a mountain summer resort, a region of infinite sylvan variety, beauty, and peace.

Let us use a little analysis here. In the early times of our country's history, when we had but a sparse population, which nearly all lived on farms or in small towns, summer vacations and excursions for rest, recreation, and the restoration of wasted energies were not needed as they are now. But, as our country has filled up, and millions of our people have crowded into cities to live, there has arisen an absolute necessity for a change of conditions and methods of life in the hot season of the year for a great proportion of our whole population. People must get out of doors. They must lay aside business and put off the burden of daily care. It is a most practical matter, a matter of the wisest and most necessary economy—of the economy of life itself and of its highest forces.

Without such a pause in work, such a period of contact with nature and the out-of-door world, as a means for the restoration of exhausted vitality, neither physical nor mental health can long be maintained. Life will not continue to be sane and efficient without an occasional visit to the sources of healing and strength in Nature's great sanitarium—the open air. It is true that there are multitudes of persons, especially of women, in our country who never have such a vacation, for whom there never arrives "a lull in the hot race," to use Mr. Arnold's expressive phrase, but they need it all the same, and it is a calamity, not only to them but to all who are near them, that the hard conditions of their lives forbid their ever yielding to the imperative need for out-of-door rest and enjoyment.

Now, the people who have been coming year after year to this great interior country of woods and lakes and shaded, winding waterways, may as well take down their maps and mark this region of their unrestrained wandering and delight all over with big black letters, "No trespassing here." This woodland heritage of the people is passing from them. No matter who has owned these forest lands hitherto, everybody has been free to wander over them. A man could go where he pleased, and this freedom to go where he pleases is one of the chief sources of enjoyment in the woods for a man with a healthy nature. It is the wandering, the exploring, the going on to "fresh woods and pastures new" which inspires the "vital feelings of delight" in a true lover of the woods. Wordsworth's wonderful expression describes perfectly the experience of many thousands of weary men and women in these abodes of beauty and freedom and peace in former days.

"No trespassing here." Everywhere, as I pass through the country, I am told that the land is passing into the hands of capitalists, clubs, and companies. They have a perfect right

to buy all the land they can pay for, and to fence it in and put a sign across every woodland path and mountain brook with the inscriptions "Keep out," "No hunting or fishing here," "Trespassing forbidden under penalty of the law," but their acquisition of whole townships of mountain woods and lakes and streams will not make the region more attractive to tourists or lovers of the wilds. The people of the woods tell me everywhere that "the clubs are getting lots of land," and I could give the names of rich men and companies who are each acquiring territory enough for a princedom. One estate owns a township not far from Racquet Lake, in Hamilton County. A well-known capitalist and his friends "have the option" on 53,000 acres. That is more than eighty square miles. They can have the tract if they want it. A club of New York city men holds about 35,000 acres. These three blocks run up together, and stretch across the map for nearly thirty miles. The club has three-fourths of a mile of coast on Racquet Lake, a large part of Big Forked Lake, and all of Little Forked Lake. Brandreth Lake, with its tributaries, belongs to one family. The 53,000-acre block includes part of the shores of Tupper Lake and nearly all the coast-line of Smith Lake, which is one of the finest lakes in the North Woods. The state owns just a little of the outlet of Smith Lake.

This is to be the character of the next great period in the history of the Adirondack region: the gathering of many small holdings into a few large ones; the utilization, protection and enjoyment of these vast tracts by their owners; and the consequent and necessary exclusion of the people from the woods. The multitudes of visitors will go elsewhere; the state will lose the revenue which they have hitherto brought into it; the great hotels will be lonely places, and the innumerable summer camps will be broken up. If the state owned the land, its people could enjoy the freedom and peace of the wilds forever.

Now, a note relating to another feature of the general situation, and to arrangements for a Forestry exhibit at the International Exposition in New York City in 1892. I think we should arrange to set up a papier-maché model of the Adirondack region, showing the extent and location of the devastations which have already been made, the tracts of denuded rock-surfaces, and those of burned-out, blasted land. Perhaps the Chamber of Commerce of New York City may feel an interest in this suggestion.

Star Lake, N. Y. *J. B. Harrison,*
Cor. Sec. American Forestry Congress.

Orchids in Flower in Brooklyn.

To the Editor of GARDEN AND FOREST:

Sir.—Even at seasons when Orchid bloom is scarce, a visitor to the collection of Mr. Frederick Scholes will invariably find a rich display among the contents of five large span-roofed structures devoted to these plants. Each house has narrow side-stages and broad centre-stages, the former containing Cypripediums, Lycastes and *Odontoglossum grande* by the hundred, the latter being well filled with Eucharis, Palms, Ferns, and *Phajus grandifolius* in great numbers standing in a bed of Selaginella, Panicum, and Tradescantia, and forming a perfect mass of green. On a recent visit I found the roof of each house entirely hidden by the hundreds of wire baskets and wooden boxes containing Cattleyas, Lælias, Aerides, Vandas, Oncidiums, Phalænopsis, and many others whose long aerial roots enjoy the humidity rising from the dense bed of foliage below. Among the Cattleyas several specimens of *C. Dowiana* were showing enormous blossoms with unusually broad labellums, finely fringed, the rich golden veins running through the dark-purple ground in pleasing contrast, and the yellow in the sepals and petals unusually bright. Next to these the beautiful *C. maxima*, a pale but very pretty variety, bore fine flowers of a light-rose color, with conspicuous purple lines on the lip. *C. Harrisoniæ*, always admired for its soft color, was represented by at least a dozen specimens, well bloomed, among which were one or two highly-colored varieties. On a block, and suspended near the glass, was a splendid variety of *C. Schilleriana* bearing on a stem three well-developed, finely-colored blossoms, the sepals and petals a very deep rose, and the color of the lip unusually vivid. Here, also, in perfect health, were two plants of *C. Acklandiæ* in full bloom, and both in more vigorous condition than this species usually shows. It occupies a place here with such varieties as *C. guttata*, *C. intermedia*, *C. Harrisoniæ*, and produces its large green and dark-purple flowers annually. A plant of the pretty scarlet-flowered *Broughtonia sanguinea* was attached to a block near the glass. *Batemannia Burtii* was also yielding its odd reddish-brown and yellow flowers from a strong plant grown on the stage where ample moisture surrounded it during active growth.

Oncidiums are grown extensively in this collection, and among the most notable in bloom were several plants of *O. leucochilum*, yielding stout, many-branched spikes, bearing the white and brown spotted flowers in great abundance. One remarkable specimen carried no less than 180 flowers on two stems. Some fifty plants of *O. Jonesianum* hanging in a sunny position were also promising flower, some with two and three spikes, and several already in bloom. The flowers of this variety are exceedingly pretty; the lip is broad and white, more or less spotted with rich purple, the sepals and petals being spotted with dark brown on a greenish-yellow ground. The Bee Orchid, *O. dasytyle*, was also in full bloom having three strong spikes of cream-yellow flowers, each with a blackish-purple centre, greatly resembling a Bee in shape. Stanhopeas could be counted by the score in great variety, many having four, five and six spikes each, and a fine group of *Odontoglossum Schleiperianum* were well flowered and very rich in color. The Phalænopsis, although not very numerous here, are probably the largest in the country. The individual plants are wonderful examples of cultivation. They are grown in wire baskets, and suspended about two and a half feet from the glass in a temperature much cooler than we usually find them. During the past winter this group, consisting of *P. Schilleriana*, *P. amabilis*, *P. Stuartiana*, *P. grandiflora* and *P. Sanderiana*, produced a magnificent display of bloom; no less than a thousand flowers were fully expanded at one time, easily the first among them being a remarkable specimen, *P. Schilleriana*, which carried 131 blossoms. At the time of my visit this plant had three growths, and eighteen sound leaves, many of which measured fifteen inches in length, and appeared well prepared for another display next season. *P. Esmeralda* was represented by a specimen with twelve spikes just showing for flower. It has six growths, and like all the other species mentioned is in vigorous condition, with stout, thick foliage and strong roots. All lovers of this beautiful genus will find the owner of this remarkable group of plants, or his skilful grower, Mr. F. Gardiner, ever ready to explain how such marvelous results have been achieved with one of the most beautiful Orchids ever introduced.

Summit, N. J. *A. Dimmock.*

Diseases of Ampelopsis.

To the Editor of GARDEN AND FOREST:

Sir.—Will you please examine the leaves of Virginia Creeper enclosed and inform me whether there is an available remedy for this disease, and whether it can be communicated to the Grape-vine?

Orange, N. J. *E. H. C.*

[This letter was referred to Professor Halsted, of Rutgers College, who replies that the whitish orbicular spots upon the leaves of the Virginia Creeper (*Ampelopsis quinquefolia*) are caused by a microscopic fungus which bears the name *Phyllosticta Ampelopsidis*. This minute fungus consists of very small threads or filaments, which run in all directions through the substance of the leaf and rob the leaf-cells of their vital fluids. Soon after the spot begins to be apparent from the dying of the leaf-tissue in the infested part, small spherical bodies appear which, after attaining full size, look like black specks upon the brown or sometimes nearly white spot. These dark bodies bear within a multitude of spores. These spores serve for the fungus the same purpose as do seeds among higher plants. It is, therefore, by these spores, which can only be seen with the high power of the microscope, that the leaf-spot fungus is propagated from year to year. With this fact in mind it is evident that, in order to destroy the fungus, all infested leaves should be burned.

The fungus is deep-seated and, therefore, does not make its presence in a leaf known until after a large part of its sapping and mining has been accomplished, consequently, it is not easy, as it is in some other mildews, to apply a remedy that will remove the fungus and save the part attacked. There is a leaf-spot of the Grape which is put in the same genus (Phyllosticta) with the one upon Ampelopsis. They are so much alike that it is not impossible that the plants upon which they grow are responsible for the difference. Professor Halsted is not sure that this disease can be communicated from the Virginia Creeper to the

vine, but he has recently seen it upon leaves of the "Boston Ivy"—*Ampelopsis tricuspidata* (*A. Veitchi*). Upon the same plant he has also observed the dreaded mildew of the Grape (*Peronospora viticola*). It is to be hoped that this useful Japanese creeper, which has hitherto been remarkably free from these pests, will not fall a prey to the many fungous diseases which now infest our native species.—Ed.]

Ribbon Grass.

To the Editor of Garden and Forest:

The "Ribbon Grass" (Garden and Forest, ii., 394) is common in most old gardens about Germantown. I enclose a specimen from an old farm-garden on my property, which was there when I bought it nearly twenty years ago. It does not often flower, but when it does, the upper portion of the culm bearing the flowers produce the green leaves of the normal form of the species. Upon the specimen the remains of the inflorescence, the green leaves and the lower striped leaves on the same culm can be plainly seen. "Gardeners' Garters" is a very common "common name" for this plant.

Germantown, Aug. 15th, 1889. *Thomas Meehan.*

Notes.

Masses of *Pontederia azurea*, of an acre or two in extent, are found floating in the river Parana.

Kœlreuterias are blooming for the second time, and many of the panicles are as large as those of the first flowering.

Owing to the cool, damp weather, blooms of such Roses as Perle des Jardins, Papa Gontier, The Bride and Niphetos, now in market, are as large and full as they usually are in the middle of September.

Mr. W. Watson, assistant curator of the Royal Gardens, Kew, assisted by Mr. Bean, the foreman of the Orchid department, has commenced the publication, in monthly parts, of a treatise on Orchids, for the use of amateurs.

Some remarkably fine Lotus flowers from the pond in New Jersey, where they are naturalized (see Garden and Forest for April 10th), were lately sent to this office. The expanded flowers measured thirteen inches across.

Messrs. Siebrecht & Wadley have issued a catalogue of more than 200 pages, in which, for the convenience of amateurs, the plants are grouped into classes, according to their cultural requirements and adaptability to various special purposes.

Among the small trees now in bloom *Rhus semialata*, var. *Osbecki*, is conspicuous, being covered with white flowers in spikes fifteen inches long and six or eight inches in diameter. The rich, tropical-looking foliage is a glossy green, changing to bright colors in autumn.

The large white flower-clusters of *Hydrangea paniculata grandiflora* are now very freely cut and sold for decorative purposes. Not only do they remain without wilting for a week or ten days in a warm room, but they will dry on the stems and retain their cream-white color all winter. Half a dozen of these panicles on long stems in a large vase, with spikes of Gladiolus of some positive color, make a very effective group.

The Governor of New Hampshire has appointed Messrs. John J. Bell and John D. Lyman, both of Exeter, to represent the state at the annual meeting of the American Forestry Congres, in Philadelphia, October 15th to 18th, and the Governor of Tennessee has appointed the following gentlemen: J. M. Coulter, Dyer Station; John P. Buchanan, Murfreesboro; Tomlinson Fort, Chattanooga; Lucius Polk, Columbia, and P. C. Isbell, Manchester.

The city trade in such plants as Mignonette, Sweet Peas, China Asters, Sunflowers, and, lately, single and double Dahlias has been good all summer long. Many people who have no country seats at Lenox or by the sea buy flowers, not because it is the fashion, but because they love them, and they buy them more abundantly in summer because they are cheaper. When spikes of Gladiolus are selling at twenty-five cents a dozen they are quite as beautiful as when they cost seventy-five cents each.

A White Oak tree was cut near Scottsburg, Indiana, not long ago which measured, according to the *St. Louis Lumberman*, twenty-seven feet in circumference. The tree was ripped up by means of a cross-cut saw, and the owners got out one board that was ten inches thick, five feet two and a half inches wide at the butt and four feet six and a half inches at the top, and thirty-two feet long. This board was loaded upon a broad-tread wagon, to which two yoke of oxen and eight horses were hitched, and it took one whole day to remove it one and a half miles.

Nymphæa Marliacæ chromatella is a hybrid from *N. flava*, the Yellow Water Lily of Florida, the other parent being, as English authorities say, *N. tuberosa*. However that may be, the plant is now blooming with Mr. E. D. Sturtevant at Bordentown, New Jersey, and it seems to be an acquisition. The flower is yellow, considerably larger than that of the Florida plant, and a trifle larger than the northern pond Lily, *N. odorata*. Its odor is pleasant, but not powerful; it continues to bloom from June until late autumn, is more floriferous than *N. flava*, and, what is of greater importance, it is perfectly hardy in this latitude.

The New York Florists' Club have selected Mr. John Thorpe as the representative of their interests in the management of the World's Fair to be held in this city in 1892. Already the nurserymen and florists of the Old World, who have a rapidly-growing trade in this country, are inquiring as to their probable opportunities for a display, and if anything like a characteristic, complete and continually fresh exhibition in the line of florticulture is to be made the work of organizing it should not be deferred much longer. No man in the country is better fitted for such a place by natural aptitude and experience than Mr. Thorpe.

Colonel Pearson has visited the famous vineyards on the shores of Lake Keuka and of Seneca Lake, under instructions from the Department of Agriculture, and he reports that the Black Rot, as well as Anthracnose, and both the "downy" and "powdery" Mildews have at last attacked the vines in this region, where these diseases have been hitherto practically unknown. Discouraging reports of the Black Rot also comes from the Hudson River Valley. Of course, it is now too late to use remedies with any success, but the Grape-growers are eagerly studying the matter and preparing, as well as they can, to use preventive measures another season.

Rev. M. J. Berkeley, who was the first botanist in England, and for many years almost the only one, to give systematic attention to the diseases of plants, died on the 30th of July, at Sibbertoft, of which place he had been vicar for twenty years. He had a wide knowledge of almost every department of botany and natural history, although he was especially eminent in the field of cryptogamic botany, and it was through his discriminative knowledge of Fungi and their effects upon plants that he rendered most signal service to horticulture. Mr. Berkeley was a man of striking and dignified appearance and of straight-forward and manly character. He was eighty-six years old.

The dwarf trees which the Japanese horticulturists are showing at the Paris Exhibition are attracting much attention. Pines, Thujas and Cedars, said to be 100 or 150 years old, are only eighteen inches high, and with such specimens it would be easy to have a coniferous forest on a balcony. These arboreal deformities are produced by great labor, and, if the truth is told about their ages, this work of arresting the tree's development and forcing it into contorted forms must be persisted in by several generations of foresters. All this painstaking is hardly paid for by the beauty of the resulting abortions, but, as has been suggested, a look at these trees will explain where the fantastic forms come from which serve as models for the plants we see on the lacquered trays, bronzes and embroideries which come from Japan.

Next to the Yellow or Long-leaf Pine, the Cypress is the most important timber tree in Florida. Aside from the manufacture of shingles, for which it is so largely used, there is a large demand for this timber for boat-building and bridge-construction. Cypress is preferred for window sashes and outside doors, for inside work of brick houses, for water-tanks, cisterns, barrels, buckets, tubs and water conductors. It furnishes a good body for veneered furniture, and veneer itself made from Cypress burls is often of extraordinary beauty. For railroad ties this timber is unexcelled, and likewise for paving blocks. As there is much waste in sawing Cypress, and it is difficult to dispose of this waste, even by burning, the *Florida Times-Union* suggests that the manufacture of these blocks might be made most profitable in connection with a Cypress mill near some city like Jacksonville. Cypress blocks have proved véry satisfactory for paving in that city. In Galveston, where no sap-wood is used, the sawed blocks of heart-wood show very little wear.